

Amendments to the Drawings

Figure 4 has been added to further clarify the invention. No new material has been introduced.

Attachment: New Drawing, FIG. 4

Remarks

This Amendment is in reply to the Office Action mailed October 6, 2005. In the Office Action, a shortened statutory period of three (3) months was specified so that the due date for the reply is on or before January 6, 2006. A short review of the status of the claims is appropriate.

The application was filed with Claims 1-7. Claims 3, 4, 5 and 7 were objected to because of informalities. Claims 1-2 and 6 were rejected under 35 U.S.C. § 102(b) as being anticipated by Guzman-Casillas et al., US Patent No. 6,028,754 (the '754 patent). Claims 3, 4, 5 and 7 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over the '754 patent.

In this reply, claims 1, 3, 5, 6 and 7 have been amended. Claim 4 has been canceled. New claims 8-19 have been added to further clarify the present invention.

Informalities

Claims 3, 4, 5 and 7 were objected to because of informalities. Applicant has corrected the informalities in claims 3, 5 and 7, and has cancelled claim 4.

Rejections under 35 U.S.C. § 102(b)

Claims 1-2 and 6 were rejected under 35 U.S.C. § 102(b) as being anticipated by the '754 patent. Ms. Thomas correctly points out that Guzman-Casillas et al. discloses a system for "improving" the performance of a distance type protective relay for power systems. In general, unlike the Applicant's invention where a system, apparatus and method are provided to select whether an unfiltered m value or a filtered m value is provided to the distance element to improve distance element operation, the improvement provided by the '754 patent is a result of recognizing and then delaying

use of questionable secondary signals from a CCTV (e.g., those due to coupling CCVT transients) that do not properly follow their corresponding input voltage, upon which the decision of whether to issue a trip signal is based.

More specifically, the Applicant's invention claims a system, apparatus and method to select whether an unfiltered m value or a filtered m value is provided to the distance element. The selection is based on a comparison of the m value to each of a first and a second percentage of the zone reach value, where the first percentage of the zone reach value is greater than the zone reach value and the second percentage of the zone reach value is less than the zone reach value. The first and second percentages of the zone reach value (or the preselected first and second threshold values) are predetermined to provide faster distance element response (via the m value) during a non-questionable fault condition, and to provide more accurate, but slower, distance element response (via the filtered m value) during questionable faults.

The '754 patent discloses identifying a low power system voltage condition indicative of a fault. Figure 6 illustrated a series of comparators with thresholds and logic gates for this purpose. Based on a calculated SIR, a zone 1 reach is established and divided into two portions; an instantaneous portion and a time delayed portion. Minimum reach calculations or m values indicative of a distance between the fault and the protective relay, are then compared to the instantaneous portion ($m \leq Z_{R1NEW}$) and the time delayed portion ($Z_{R1NEW} > m \leq Z_{R1}$). Minimum reach calculations in the instantaneous portion of the zone 1 reach are used to cause a circuit breaker trip, while minimum reach calculations beyond the zone 1 reach are ignored. Minimum reach calculations in the time delayed portion of the zone 1 reach however cause a timer to

be initiated, where accumulated time is compared to a setting selected to allow CCTV transients to settle out before an associated trip signal is issued. The delay is overridden if the secondary voltage signal meets a smoothness criteria indicating that the CCTV transients have abated.

Accordingly, the system described in the '754 patent may run concurrently with the system, apparatus and/or method of the Applicant's invention as they address different aspects of distance type protective relay performance. And as described above, unlike the system and apparatus of the Applicant's invention which enables selection of one of an unfiltered m value or a filtered m value for use by the distance element where the selection is based on a comparison of the unfiltered m value to each of a first and a second percentage of the zone reach value, the system of the '754 patent is used to delay use of secondary voltage signals associated with m values nearer the boundary of the zone 1 reach to allow abatement of CCTV transients.

Further, the "smoothness" determination of the '754 patent refers to a stabilization time (*i.e.*, the time it takes for CCTV transients to abate) and is carried out by a series of comparators. It does not refer to the noise attenuation provided by the filter of the Applicant's invention.

In summary, **claim 1** has been amended to further distinguish the *noise attenuation* provided by the filter. It has also been amended to properly include the *preselected second threshold value* below which the filtered quantity is applied. **Claim 2** and **claim 6** depend from amended claim 1.

Rejections under 35 U.S.C. § 103(a)

Claims 3, 4, 5 and 7 were rejected under 35 U.S.C. § 103 (a) as being

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unpatentable over the '754 patent. In summary, **claims 3, 5 and 7** depend from amended claim 1. **Claim 4** has been cancelled.

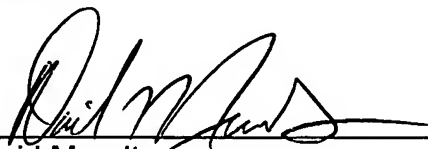
Conclusion

It is respectfully submitted that amended claims 1-3 and 5-19 are allowable. Accordingly, further and favorable reconsideration by the examiner is therefore urged. With the foregoing in mind, applicant respectfully requests that the Examiner place the present application in condition for allowance.

Should the Examiner be of the opinion that further amendments or reply is required, Applicants encourage the Examiner to contact the undersigned attorney at the telephone number set forth below.

Although no additional fees are believed to be due at this time, the Commissioner is authorized to charge any additional fees or deficiencies or credit any overpayments to Alex, Cook, McFarron, Manzo, Cummings & Mehler, Ltd., Deposit Account No. 50-1039 with reference to attorney docket number (1444-0081).

Regards,



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